CLAIMS

1. A gas barrier film comprising a base material, and an inorganic thin film composed of a silicon oxide film formed on one or both surfaces of the base material, wherein radical density of the Pb center of the silicon oxide film observed by an electron spin resonance method (ESR method) is from 1×10^{16} to 1×10^{19} spins/cm^3.

2. A gas barrier film comprising a base material, and an inorganic thin film containing silicon oxide and the other metal component formed on one or both surfaces of the base material, wherein radical density of the Pb center of the silicon oxide in the inorganic thin film observed by an ESR method is from 13×10^{14} to 3×10^{17} spins/mol.

3. A gas barrier film comprising a base material, and an inorganic thin film containing silicon oxide formed on one or both surfaces of the base material, wherein a ratio of radical density (S2) of the Pb center measured after heating the gas barrier film at 120°C for 24 hours to radical density (S1) of the Pb center of the inorganic thin film observed by an ESR method, (S2/S1), is 0.5 or more.

4. The gas barrier film according to any one of claims 1

to 3, wherein the thickness of the inorganic thin film is from 0.5 to 40 nm.

5. The gas barrier film according to any one of claims 1 to 3, wherein the base material is at least one selected from polyester, polyamide, polyolefin and biodegradable resin.

6. The gas barrier film according to any one of claims 1 to 3, wherein an anchor coat layer is formed between the base material and the inorganic thin film.

7. The gas barrier film according to claim 6, wherein the anchor coat layer is formed of at least one resin selected from the group consisting of polyester resin, urethane resin, acrylic resin and oxazoline group-containing resin.

8. The gas barrier film according to any one of claims 1 to 3, wherein a top coat layer is formed on the surface of at least one inorganic thin film.

9. The gas barrier film according to claim 8, wherein the top coat layer is a layer made of at least one resin selected from polyester resin, urethane resin, acrylic resin, vinyl alcohol-based resin and oxazoline group-containing resin, or made of a resin containing inorganic particles formed by

mixing at least one kind of inorganic particles selected from silica sol, alumina sol, particulate inorganic filler and layered inorganic filler with at least one resin, or polymerizing a raw material of the resin in the presence of the inorganic particles.

10. The gas barrier film according to any one of claims 1 to 3, wherein a ratio of a value (P2) of steam permeability measured after 48 hours to a value (P1) of steam permeability measured by the method defined in JIS K 7129B after 3 hours under the conditions of 40°C and 90%RH, (P2/P1), is 0.5 or more.

11. A gas barrier laminate comprising the gas barrier film of any one of claims 1 to 3, a printed layer formed on the surface of the inorganic thin film of the gas barrier film, and a heat seal layer laminated on the printed layer.

12. A gas barrier laminate comprising the gas barrier film of claim 8, a printed layer formed on the surface of the top coat of the gas barrier film, and a heat seal layer laminated on the printed layer.

13. The gas barrier laminate according to claim 11, wherein at least one paper and/or plastic film is formed between the

printed layer and the heat seal layer.

14. The gas barrier laminate according to claim 11, wherein a ratio of a value (P2) of steam permeability measured after 48 hours to a value (P1) of steam permeability measured by the method defined in JIS K 7129B after 3 hours under the conditions of 40°C and 90%RH, (P2/P1), is 0.5 or more.